

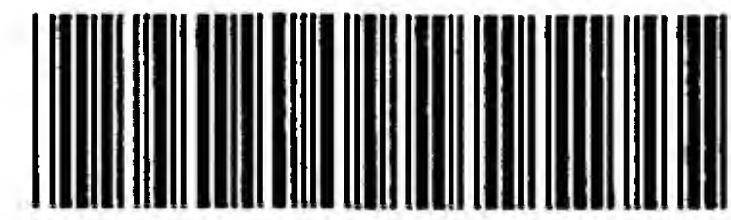
RAW SEQUENCE LISTING

#  
8

The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.

Application Serial Number: 10/527,771  
Source: PT/10  
Date Processed by STIC: 3/22/05

**ENTERED**



PCT

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/527,771

DATE: 03/22/2005  
TIME: 09:46:04

Input Set : A:\PTO.SR.txt  
Output Set: N:\CRF4\03222005\J527771.raw

3 <110> APPLICANT: University Gent  
5 <120> TITLE OF INVENTION: Ostertagia vaccine  
7 <130> FILE REFERENCE: 2002-015  
**C--> 9 <140> CURRENT APPLICATION NUMBER: US/10/527,771**  
**C--> 9 <141> CURRENT FILING DATE: 2005-03-11**  
 9 <150> PRIOR APPLICATION NUMBER: US 10/243,319  
 10 <151> PRIOR FILING DATE: 2002-09-13  
 12 <160> NUMBER OF SEQ ID NOS: 27  
 14 <170> SOFTWARE: PatentIn version 3.2  
 16 <210> SEQ ID NO: 1  
 17 <211> LENGTH: 828  
 18 <212> TYPE: DNA  
 19 <213> ORGANISM: Ostertagia ostertagi  
 22 <220> FEATURE:  
 23 <221> NAME/KEY: CDS  
 24 <222> LOCATION: (11)..(721)  
 26 <400> SEQUENCE: 1  
 27 gcagctcggt atg cag gca cta atc ggt att gct gcc cta tac ctg gtg 49  
 28 Met Gln Ala Leu Ile Gly Ile Ala Ala Leu Tyr Leu Val  
 29 1 5 10  
 31 ctg gtg aca tca aat acc gaa gca ggt ttt tgc tgc cca gca gat cta 97  
 32 Leu Val Thr Ser Asn Thr Glu Ala Gly Phe Cys Cys Pro Ala Asp Leu  
 33 15 20 25  
 35 aac caa act gat gag gca aga maa atc ttc ctc gat ttt cac aat caa 145  
**W--> 36 Asn Gln Thr Asp Glu Ala Arg Xaa Ile Phe Leu Asp Phe His Asn Gln**  
 37 30 35 40 45  
 39 gtt cgc cgt gat ata gca ggt gca agc ccg ttg ctc aac ctc acc gga 193  
 40 Val Arg Arg Asp Ile Ala Gly Ala Ser Pro Leu Leu Asn Leu Thr Gly  
 41 50 55 60  
 43 gct gtt car atg cga aat gtt ctc ggt cca gct aag aac atg tac aga 241  
 44 Ala Val Gln Met Arg Asn Val Leu Gly Pro Ala Lys Asn Met Tyr Arg  
 45 65 70 75  
 47 atg gac tgg gac tgc aat ctg gaa gca aaa gca aag gca atg att tgg 289  
 48 Met Asp Trp Asp Cys Asn Leu Glu Ala Lys Ala Met Ile Trp  
 49 80 85 90  
 51 cca tgc act acg cct ctg cca ata gac acg agt att cca caa aat ctc 337  
 52 Pro Cys Thr Thr Pro Leu Pro Ile Asp Thr Ser Ile Pro Gln Asn Leu  
 53 95 100 105  
 55 gct car tgg cta ctt ttc caa aac agt cag gaa amt gaa gtg ttg acg 385  
 56 Ala Gln Trp Leu Leu Phe Gln Asn Ser Gln Glu Xaa Glu Val Leu Thr  
 57 110 115 120 125  
 61 caa acg ccc tgg tct tgg gta acc gca tca cta cga aat ctt caa cct 433  
 62 Gln Thr Pro Trp Ser Trp Val Thr Ala Ser Leu Arg Asn Leu Gln Pro

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/527,771

DATE: 03/22/2005  
TIME: 09:46:04

Input Set : A:\PTO.SR.txt  
Output Set: N:\CRF4\03222005\J527771.raw

63	130	135	140	
65	gat aca gaa gct aac att tat aac tgg	caa att aga cca cta tcc aac		481
66	Asp Thr Glu Ala Asn Ile Tyr Asn Trp	Gln Ile Arg Pro Leu Ser Asn		
67	145	150	155	
69	att gcg aac tgg caa aac cta aaa gtt	gga tgt gct cac aaa gtg tgc		529
70	Ile Ala Asn Trp Gln Asn Leu Lys Val	Gly Cys Ala His Lys Val Cys		
71	160	165	170	
73	aaa ttc ccc acc ggg aca aat atg gtt	gtg tct tgc gct tat ggc ggc		577
74	Lys Phe Pro Thr Gly Thr Asn Met Val	Val Ser Cys Ala Tyr Gly Gly		
75	175	180	185	
77	gaa gta ctc caa gat aac gaa gtt gta	tgg gac aag gga cca act tgc		625
78	Glu Val Leu Gln Asp Asn Glu Val Val	Trp Asp Lys Gly Pro Thr Cys		
79	190	195	200	205
81	atg tgc aat gct tat ccc aac tcg ttc	tgc tgc aac aat ctg tgt gac		673
82	Met Cys Asn Ala Tyr Pro Asn Ser Phe	Cys Cys Asn Asn Leu Cys Asp		
83	210	215	220	
85	aca ata gct gct gcg aca ctt cgc aag	cag cct tgt aaa tcg act tga		721
86	Thr Ile Ala Ala Thr Leu Arg Lys Gln	Pro Cys Lys Ser Thr		
87	225	230	235	
89	agcgaaaagg cggtggat gtcccgaaaga gaacggagt gatcacatca cagtatccca			781
91	taatgtcggtt catcataata aacgcacttc tctgaaaaaaaa aaaaaaaaa			828
94	<210> SEQ ID NO: 2			
95	<211> LENGTH: 236			
96	<212> TYPE: PRT			
97	<213> ORGANISM: Ostertagia ostertagi			
99	<220> FEATURE:			
100	<221> NAME/KEY: misc_feature			
101	<222> LOCATION: (37)..(37)			
102	<223> OTHER INFORMATION: The xaa at location 37 stands for Lys, or Gln.			
104	<220> FEATURE:			
105	<221> NAME/KEY: misc_feature			
106	<222> LOCATION: (121)..(121)			
107	<223> OTHER INFORMATION: The xaa at location 121 stands for Asn, or Thr.			
109	<400> SEQUENCE: 2			
111	Met Gln Ala Leu Ile Gly Ile Ala Ala Leu Tyr Leu Val Leu Val Thr			
112	1 5 10 15			
115	Ser Asn Thr Glu Ala Gly Phe Cys Cys Pro Ala Asp Leu Asn Gln Thr			
116	20 25 30			
W-->	<b>119 Asp Glu Ala Arg Xaa Ile Phe Leu Asp Phe His Asn Gln Val Arg Arg</b>			
120	35 40 45			
123	Asp Ile Ala Gly Ala Ser Pro Leu Leu Asn Leu Thr Gly Ala Val Gln			
124	50 55 60			
127	Met Arg Asn Val Leu Gly Pro Ala Lys Asn Met Tyr Arg Met Asp Trp			
128	65 70 75 80			
131	Asp Cys Asn Leu Glu Ala Lys Ala Lys Ala Met Ile Trp Pro Cys Thr			
132	85 90 95			
135	Thr Pro Leu Pro Ile Asp Thr Ser Ile Pro Gln Asn Leu Ala Gln Trp			
136	100 105 110			
139	Leu Leu Phe Gln Asn Ser Gln Glu Xaa Glu Val Leu Thr Gln Thr Pro			

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/527,771

DATE: 03/22/2005  
TIME: 09:46:04

Input Set : A:\PTO.SR.txt  
Output Set: N:\CRF4\03222005\J527771.raw

140 115 120 125  
143 Trp Ser Trp Val Thr Ala Ser Leu Arg Asn Leu Gln Pro Asp Thr Glu  
144 130 135 140  
147 Ala Asn Ile Tyr Asn Trp Gln Ile Arg Pro Leu Ser Asn Ile Ala Asn  
148 145 150 155 160  
151 Trp Gln Asn Leu Lys Val Gly Cys Ala His Lys Val Cys Lys Phe Pro  
152 165 170 175  
155 Thr Gly Thr Asn Met Val Val Ser Cys Ala Tyr Gly Gly Glu Val Leu  
156 180 185 190  
159 Gln Asp Asn Glu Val Val Trp Asp Lys Gly Pro Thr Cys Met Cys Asn  
160 195 200 205  
163 Ala Tyr Pro Asn Ser Phe Cys Cys Asn Asn Leu Cys Asp Thr Ile Ala  
164 210 215 220  
167 Ala Ala Thr Leu Arg Lys Gln Pro Cys Lys Ser Thr  
168 225 230 235  
171 <210> SEQ ID NO: 3  
172 <211> LENGTH: 306  
173 <212> TYPE: DNA  
174 <213> ORGANISM: Ostertagia ostertagi  
177 <220> FEATURE:  
178 <221> NAME/KEY: CDS  
179 <222> LOCATION: (3)..(284)  
181 <220> FEATURE:  
182 <221> NAME/KEY: misc\_feature  
183 <222> LOCATION: (10)..(10) /  
184 <223> OTHER INFORMATION: n is a, c, g, or t  
186 <220> FEATURE:  
187 <221> NAME/KEY: misc\_feature /  
188 <222> LOCATION: (16)..(16) /  
189 <223> OTHER INFORMATION: n is a, c, g, or t  
191 <220> FEATURE:  
192 <221> NAME/KEY: misc\_feature /  
193 <222> LOCATION: (82)..(82) /  
194 <223> OTHER INFORMATION: n is a, c, g, or t  
196 <220> FEATURE:  
197 <221> NAME/KEY: misc\_feature /  
198 <222> LOCATION: (226)..(226) /  
199 <223> OTHER INFORMATION: n is a, c, g, or t  
201 <220> FEATURE:  
202 <221> NAME/KEY: misc\_feature /  
203 <222> LOCATION: (240)..(240) /  
204 <223> OTHER INFORMATION: n is a, c, g, or t  
206 <220> FEATURE:  
207 <221> NAME/KEY: misc\_feature /  
208 <222> LOCATION: (248)..(248) /  
209 <223> OTHER INFORMATION: n is a, c, g, or t  
211 <400> SEQUENCE: 3  
W--> 212 gc ggc cgc gnc gac cnt gtg atc agc atc atg gct ctg tgg ccc gtg 47  
213 Gly Arg Xaa Asp Xaa Val Ile Ser Ile Met Ala Leu Trp Pro Val

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/527,771

DATE: 03/22/2005  
TIME: 09:46:04

Input Set : A:\PTO.SR.txt  
Output Set: N:\CRF4\03222005\J527771.raw

214	1	5	10	15													
216	gac	cgt	tcc	gag	cgc	atg	ctg	gaa	gag	ccg	ttc	ang	cgt	gtg	gat	cgt	95
217	Asp	Arg	Phe	Glu	Arg	Met	Leu	Glu	Glu	Pro	Phe	Xaa	Arg	Val	Asp	Arg	
218																30	
220	20	25															143
221	ttc	tgc	ccg	atg	aga	gat	gct	gac	tgg	atg	agc	cgt	cag	att	atg	ccc	
222	Phe	Cys	Pro	Met	Arg	Asp	Ala	Asp	Trp	Met	Ser	Arg	Gln	Ile	Met	Pro	
223	35	40														45	
224	tac	tgg	aga	gat	gcc	gat	cac	tct	gtg	ctt	cat	gtg	gga	aat	caa	aca	191
225	Tyr	Trp	Arg	Asp	Ala	Asp	His	Ser	Val	Leu	His	Val	Gly	Asn	Gln	Thr	
226	50	55														60	
228	aag	gat	gtc	gtg	aat	gac	gag	aag	aaa	ttc	gca	gnc	gct	ttg	gat	gtg	239
229	Lys	Asp	Val	Val	Asn	Asp	Glu	Lys	Lys	Phe	Ala	Xaa	Ala	Leu	Asp	Val	
230	65	70														75	
232	nca	cac	ttt	agg	cca	gaa	gag	ttt	aag	gta	caa	ttt	gaa	gtg	acg	284	
233	Xaa	His	Xaa	Arg	Pro	Glu	Glu	Leu	Lys	Val	Gln	Leu	Glu	Val	Thr		
234	80	85														90	
236	tgaccttaca	atcgaaggac	at														306
241	<210>	SEQ	ID	NO:	4												
242	<211>	LENGTH:	94														
243	<212>	TYPE:	PRT														
244	<213>	ORGANISM:	Ostertagia	ostertagi													
246	<220>	FEATURE:															
247	<221>	NAME/KEY:	misc_feature														
248	<222>	LOCATION:	(3)..(3)														
249	<223>	OTHER INFORMATION:	The xaa at location 3 stands for Asp, Gly, Ala, or Val.														
251	<220>	FEATURE:															
252	<221>	NAME/KEY:	misc_feature														
253	<222>	LOCATION:	(5)..(5)														
254	<223>	OTHER INFORMATION:	The xaa at location 5 stands for His, Arg, Pro, or Leu.														
256	<220>	FEATURE:															
257	<221>	NAME/KEY:	misc_feature														
258	<222>	LOCATION:	(27)..(27)														
259	<223>	OTHER INFORMATION:	The xaa at location 27 stands for Lys, Arg, Thr, or Met.														
261	<220>	FEATURE:															
262	<221>	NAME/KEY:	misc_feature														
263	<222>	LOCATION:	(75)..(75)														
264	<223>	OTHER INFORMATION:	The xaa at location 75 stands for Asp, Gly, Ala, or Val.														
266	<220>	FEATURE:															
267	<221>	NAME/KEY:	misc_feature														
268	<222>	LOCATION:	(80)..(80)														
269	<223>	OTHER INFORMATION:	The xaa at location 80 stands for Thr, Ala, Pro, or Ser.														
271	<220>	FEATURE:															
272	<221>	NAME/KEY:	misc_feature														
273	<222>	LOCATION:	(82)..(82)														
274	<223>	OTHER INFORMATION:	The xaa at location 82 stands for Leu, or Phe.														
276	<400>	SEQUENCE:	4														
W-->	278	Gly	Arg	Xaa	Asp	Xaa	Val	Ile	Ser	Ile	Met	Ala	Leu	Trp	Pro	Val	Asp
279	1	5													15		
282	Arg	Phe	Glu	Arg	Met	Leu	Glu	Glu	Pro	Phe	Xaa	Arg	Val	Asp	Arg	Phe	

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/527,771

DATE: 03/22/2005  
TIME: 09:46:04

Input Set : A:\PTO.SR.txt  
Output Set: N:\CRF4\03222005\J527771.raw

283	20	25	30	
286	Cys Pro Met Arg Asp Ala Asp Trp	Met Ser Arg Gln Ile	Met Pro Tyr	
287	35	40	45	
290	Trp Arg Asp Ala Asp His Ser Val	Leu His Val Gly	Asn Gln Thr Lys	
291	50	55	60	
294	Asp Val Val Asn Asp Glu Lys Lys	Phe Ala Xaa Ala	Leu Asp Val Xaa	
295	65	70	75	80
298	His Xaa Arg Pro Glu Glu Leu Lys	Val Gln Leu Glu Val	Thr	
299	85	90		
302	<210> SEQ ID NO: 5			
303	<211> LENGTH: 583			
304	<212> TYPE: DNA			
305	<213> ORGANISM: Ostertagia ostertagi			
308	<220> FEATURE:			
309	<221> NAME/KEY: CDS			
310	<222> LOCATION: (2)..(583)			
312	<400> SEQUENCE: 5			
313	g gct ttt atc gga aaa ccc gca ccc gac ttc gcc aca aag gcc gtc tat			49
314	Ala Phe Ile Gly Lys Pro Ala Pro Asp Phe Ala Thr Lys Ala Val Tyr			
315	1 5 10 15			
317	aat ggc gac ttc atc gac gtg aaa ctg tct gac tac aag ggc aag tac			97
318	Asn Gly Asp Phe Ile Asp Val Lys Leu Ser Asp Tyr Lys Gly Lys Tyr			
319	20 25 30			
321	acc gtc ctc ttc ttc tat cca ctg gat ttc acg ttt gtc tgt cct acg			145
322	Thr Val Leu Phe Phe Tyr Pro Leu Asp Phe Thr Phe Val Cys Pro Thr			
323	35 40 45			
325	gaa atc atc gcc ttt tcc gac cgt gtc gaa gaa ttc aaa aaa atc gat			193
326	Glu Ile Ile Ala Phe Ser Asp Arg Val Glu Glu Phe Lys Lys Ile Asp			
327	50 55 60			
329	gct gcg gtc ctc gct tgt tca amt gat tcc gtt ttc tct cat ctg gcg			241
W--> 330	Ala Ala Val Leu Ala Cys Ser Xaa Asp Ser Val Phe Ser His Leu Ala			
331	65 70 75 80			
333	tgg atc aat act cct cgc aag atg ggc ggc ctt ggt gac atg aac att			289
334	Trp Ile Asn Thr Pro Arg Lys Met Gly Gly Leu Gly Asp Met Asn Ile			
335	85 90 95			
337	ccc gtt ctt gct gac acc aac cac caa att gca aag gac tat ggt gta			337
338	Pro Val Leu Ala Asp Thr Asn His Gln Ile Ala Lys Asp Tyr Gly Val			
339	100 105 110			
341	ctg aaa gaa gac gaa gga atc gct tac aga ggt ctt ttc att att gac			385
342	Leu Lys Glu Asp Glu Gly Ile Ala Tyr Arg Gly Leu Phe Ile Ile Asp			
343	115 120 125			
345	cct aag gga att ctg cga cag atc act gtc aat gac ctt cct gtc ggt			433
346	Pro Lys Gly Ile Leu Arg Gln Ile Thr Val Asn Asp Leu Pro Val Gly			
347	130 135 140			
349	cgc tct gtg gat gag act ctc cgt ctg gtg cag gcc ttc caa tac gtt			481
350	Arg Ser Val Asp Glu Thr Leu Arg Leu Val Gln Ala Phe Gln Tyr Val			
351	145 150 155 160			
353	gac aag cat ggt gag gtg tgc cca gct ggt tgg act cct gga aaa gct			529
354	Asp Lys His Gly Glu Val Cys Pro Ala Gly Trp Thr Pro Gly Lys Ala			

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/527,771

DATE: 03/22/2005  
TIME: 09:46:06

Input Set : A:\PTO.SR.txt  
Output Set: N:\CRF4\03222005\J527771.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos. 37,121  
Seq#:2; Xaa Pos. 37,121  
Seq#:3; N Pos. 10,16,82,226,240,248  
Seq#:3; Xaa Pos. 3,5,27,75,80,82  
Seq#:4; Xaa Pos. 3,5,27,75,80,82  
Seq#:5; Xaa Pos. 72  
Seq#:6; Xaa Pos. 72  
Seq#:7; N Pos. 11,35,36,41,43,53,67,199,555,590,648,662,669,682  
Seq#:7; Xaa Pos. 4,12,14,15,18,23,67,197,221,223,228  
Seq#:8; Xaa Pos. 4,12,14,15,18,23,67,197,221,223,228  
Seq#:11; N Pos. 813,858  
Seq#:13; Xaa Pos. 83,86,87,88,90,91,92,93,95,96,97,98,99,100,102,103,104  
Seq#:13; Xaa Pos. 105,106,108,428  
Seq#:14; Xaa Pos. 83,86,87,88,90,91,92,93,95,96,97,98,99,100,102,103,104  
Seq#:14; Xaa Pos. 105,106,108,428  
Seq#:21; N Pos. 24,25,29,30,34,35

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:15,16,17,18,19,20,21,22,23,24,25,26,27

**VERIFICATION SUMMARY**  
PATENT APPLICATION: US/10/527,771

DATE: 03/22/2005  
TIME: 09:46:06

Input Set : A:\PTO.SR.txt  
Output Set: N:\CRF4\03222005\J527771.raw

L:9 M:270 C: Current Application Number differs, Replaced Current Application No  
L:9 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:36 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ ID#:1  
L:36 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:145  
M:341 Repeated in SeqNo=1  
L:119 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:32  
M:341 Repeated in SeqNo=2  
L:212 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0  
M:341 Repeated in SeqNo=3  
L:278 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0  
M:341 Repeated in SeqNo=4  
L:330 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ ID#:5  
L:330 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:241  
L:398 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:64  
L:512 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0  
M:341 Repeated in SeqNo=7  
L:638 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0  
M:341 Repeated in SeqNo=8  
L:924 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:784  
M:341 Repeated in SeqNo=11  
L:1030 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ ID#:13  
L:1030 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:288  
M:341 Repeated in SeqNo=13  
L:1288 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:80  
M:341 Repeated in SeqNo=14  
L:1517 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:0